

## CHAPTER 10: WHAT DID WE LEARN ABOUT AIRFIELD OPERATIONS CAPACITY?

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### Why is it Important?

The operations capacity of an airport is a measure of the theoretical maximum number of aircraft operations that can be accommodated by the runway/taxiway system over a specified period of time without incurring unacceptable levels of congestion or delay. For this analysis, the annual operations capacity or Annual Service Volume (ASV) of the airport was used as the basis for evaluation.

While it is possible for an airport to operate beyond its calculated ASV, aircraft delays will increase as the number of operations rise above the ASV. As delays grow, so do the operating costs of the airlines and aircraft owners as well as for the airport operators. In addition environmental impacts increase due to increased delays that can cause increased air and noise pollution from aircraft waiting to take off or land. Finally, there are potential repercussions on airport system capacity as a whole when any airport within the system suffers significant delays.

### What Does the Current System Look Like?

Figure 125 presents an overview of 2005 statewide operations capacity by airport service classification, as well as the percentage of system capacity used. State system operations capacity is calculated based on the aggregate Annual Service Volumes for Washington airports as determined during LATIS Phase I.

**Figure 125: 2005 State System Capacity  
by Airport Service Classification**

<b>Airport Classifications</b>	<b>Overall % of System Capacity Provided</b>	<b>2005 Demand % of System Capacity Used</b>
Commercial Service	15.6%	5.7%
Regional Service	16.0%	5.0%
Community Service	23.1%	2.0%
Local Service	13.1%	0.3%
Recreation/Remote	25.4%	1.4%
Seaplane Base	6.8%	0.2%
<b>Totals</b>	<b>100.0%</b>	<b>14.6%</b>

*Airports located in and  
around the major  
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experience the greatest  
demand*

As noted in Figure 126, at the state level 2005 aircraft operations utilized less than 15 percent of overall system operations capacity. However, we also know that aircraft operations are not uniformly distributed among Washington State airports. It is the airports located in and around the major population and economic centers of the state that experience the greatest demand. During Phase I, six Washington airports were identified where 2005 operations exceeded 60 percent of the airport ASV – FAA’s threshold for determining when planning may need to begin for additional capacity. As evident from Figure 126, the Washington airports where 2005 operations demand exceeded the 60 percent threshold were limited to facilities located in the Puget Sound Region.

**Figure 126: Washington Airports Over 60 Percent Operations Capacity as of 2005**

Airport Name	Annual Service Volume	2005 Operations	2005 Operations as % of ASV
Kenmore Air Harbor, Inc.	56,250	57,000	101%
Sea-Tac International	533,041	346,744	65%
Boeing Field/King County Int'l	380,000	251,856	66%
Auburn Municipal	231,000	143,540	62%
Harvey Field	230,000	139,160	61%
Crest Airpark	146,250	240,000	61%

### Airfield Capacity by Special Emphasis Region

There are a total of 44 airports located within the Special Emphasis Regions as defined under LATIS Phase I. While these airports contribute only 12 percent of total Washington airport system capacity, 2005 operations constituted over 60 percent of total statewide demand. As noted above, six Washington airports were identified as at or above 60 percent operations capacity in 2005 – all located within the PSRC Special Emphasis Region.

A breakdown of 2005 activity level by Special Emphasis Region airports is provided in the following figures.

**Figure 127: 2005 Operations Capacity Utilization  
in Puget Sound Special Emphasis Region**

Airport	Operations Capacity (ASV) <sup>1</sup>	2005	2005 %
		Demand	Utilization
Boeing Field/King County Int'l	380,000	251,856	66%
Kenmore Air Harbor, Inc.	56,250	57,000	101%
Seattle-Tacoma Int'l	533,041	346,744	65%
Arlington Municipal	270,000	148,540	55%
Auburn Municipal	231,000	143,450	62%
Bremerton National	240,000	56,645	23%
Harvey Field	230,000	139,160	61%
Renton Municipal	230,000	87,571	38%
Snohomish County /Paine Field	316,218	150,368	48%
Tacoma Narrows	240,000	93,159	39%
Darrington Municipal	135,000	1,750	1%
Pierce County/Thun Field	213,200	61,636	29%
Bandera State	112,500	300	0%
Crest Airpark	240,000	146,250	61%
Firstair Field	150,000	32,850	22%
Lester State	Closed	Closed	
Ranger Creek State	105,000	2,050	2%
Shady Acres	120,750	13,500	11%
Sky Harbor	105,000	1,000	1%
Skykomish State	112,500	300	0%
Spanaway	140,000	13,500	10%
Swanson Field	112,500	6,315	6%
Vashon Municipal	120,000	8,740	7%
American Lake SPB	230,000	50	0%
Kenmore Air Harbor SPB/Lake Union	60,000	31,200	52%
Poulsbo SPB	230,000	275	0%
Will Rogers Wiley Post SPB	60,000	2,387	4%
<b>Total</b>	<b>4,972,959</b>	<b>1,794,598</b>	<b>36%</b>

**Figure 128: 2005 Operations Capacity Utilization  
in Southwest Special Emphasis Region**

Airport	Operations Capacity (ASV) <sup>1</sup>	2005	2005 %
		Demand	Utilization
Kelso-Longview	230,000	32,110	14%
Grove Field	230,000	7,775	3%
Pearson Field	180,000	63,050	35%
Cedars North Airpark	172,500	1,500	1%
Evergreen Field	172,500	27,000	16%
Fly For Fun	230,000	2,250	1%
Goheen Field	172,500	18,900	11%
Woodland State	172,500	5,600	3%
<b>Total</b>	<b>1,560,000</b>	<b>158,185</b>	<b>10%</b>

**Figure 129: 2005 Operations Capacity Utilization  
in Spokane Special Emphasis Region**

Airport	Operations Capacity (ASV) <sup>1</sup>	2005	2005 %
		Demand	Utilization
Spokane International	215,000	91,354	42%
Deer Park Municipal	230,000	34,650	15%
Felts Field	230,000	68,649	30%
Cross Winds	120,750	500	0%
Mead Airport	120,750	6,300	5%
<b>Total</b>	<b>916,500</b>	<b>201,453</b>	<b>22%</b>

**Figure 130: 2005 Operations Capacity Utilization  
in Tri-Cities Special Emphasis Region**

Airport	Operations Capacity (ASV) <sup>1</sup>	2005	2005 %
		Demand	Utilization
Tri-Cities	260,000	90,260	35%
Richland	115,000	28,700	25%
Prosser	230,000	12,240	5%
Vista Field	230,000	15,750	7%
<b>Total</b>	<b>835,000</b>	<b>146,950</b>	<b>17%</b>

### **Airfield Capacity by Regional Transportation Planning Organization (RTPO) Area**

During Phase I, the allocation and distribution of aviation facilities in Washington State was examined by RTPO boundaries. The figures on the following page summarize the allocation of state system capacity by RTPO and airport service classifications as well as the distribution of demand in 2005. As is evident in the figures, although the PSRC RTPO

area airports provide 20 percent of the state system operations capacity, they also experienced nearly 50 percent of total statewide operations demand in 2005. This is the result of the fact that the region's population is the state's highest and its economy is healthy and growing. These socioeconomic factors are recognized as the primary driver of growth in aviation demand. Furthermore, while PSRC RTPO Commercial and Regional Service airports provide 11 percent of total Washington operations capacity they experienced 40 percent of Washington operations in 2005. These statistics demonstrate the concentration of aircraft operations activity not only within the PSRC area as a whole, but more specifically at the Commercial and Regional Service airports within the RTPO.

**Figure 131: 2005 Washington Operations Capacity (ASV)  
Distribution by RTPO (Sorted By Service Classification)**

<b>RTPO</b>	<b>Comm'l Service</b>	<b>Regional Service</b>	<b>Community Service</b>	<b>Local Service</b>	<b>Recreation /Remote</b>	<b>Seaplane Base</b>	<b>Total % Of RTPO Capacity</b>
Benton-Franklin-Walla Walla	2%	0%	1%	1%	1%	0%	<b>5%</b>
Northeast Washington	0%	0%	2%	0%	1%	0%	<b>4%</b>
North Central Washington	1%	1%	5%	1%	2%	0%	<b>10%</b>
Palouse	1%	0%	2%	0%	1%	0%	<b>5%</b>
Peninsula	1%	1%	1%	2%	2%	0%	<b>6%</b>
Puget Sound Regional Council	4%	7%	1%	1%	5%	2%	<b>20%</b>
Quad County	2%	1%	5%	4%	3%	0%	<b>14%</b>
Other (San Juan Isl.)	1%	0%	1%	0%	0%	3%	<b>5%</b>
Skagit/Island	1%	1%	1%	1%	1%	1%	<b>6%</b>
Spokane	1%	2%	0%	0%	1%	0%	<b>4%</b>
Southwest Washington (RTC)	0%	1%	2%	0%	2%	0%	<b>5%</b>
Southwest Washington (RTPO)	0%	1%	2%	3%	2%	0%	<b>8%</b>
Thurston	0%	1%	0%	0%	2%	0%	<b>3%</b>
Whatcom	1%	0%	1%	0%	1%	1%	<b>4%</b>
Yakima Valley	1%	0%	1%	0%	0%	0%	<b>2%</b>
<b>Total</b>	<b>16%</b>	<b>16%</b>	<b>24%</b>	<b>12%</b>	<b>25%</b>	<b>7%</b>	<b>100%</b>

Note: Numbers may not sum due to rounding

**Figure 132: 2005 Washington Operations Demand Distribution by RTPO (Sorted by Service Classification)**

RTPO	Comm'l Service	Regional Service	Community Service	Local Service	Recreation /Remote	Seaplane Base	Total % of RTPO Demand
Benton-Franklin-Walla Walla	3%	1%	0%	0%	0%	0%	5%
Northeast Washington	0%	0%	1%	0%	0%	0%	1%
North Central Washington	2%	0%	2%	0%	0%	0%	4%
Palouse	1%	0%	1%	0%	0%	0%	2%
Peninsula	1%	2%	1%	0%	0%	0%	5%
Puget Sound Regional Council	18%	22%	2%	0%	6%	1%	48%
Quad County	4%	1%	3%	1%	0%	0%	8%
Other (San Juan Isl.)	3%	0%	0%	0%	0%	0%	4%
Skagit/Island	1%	2%	0%	0%	0%	0%	3%
Spokane	2%	3%	0%	0%	0%	0%	5%
Southwest Washington (RTC)	0%	1%	2%	0%	1%	0%	4%
Southwest Washington (RTPO)	0%	1%	2%	0%	0%	0%	4%
Thurston	0%	2%	0%	0%	1%	0%	3%
Whatcom	2%	0%	0%	0%	0%	0%	3%
Yakima Valley	1%	0%	0%	0%	0%	0%	1%
<b>Total</b>	<b>39%</b>	<b>34%</b>	<b>14%</b>	<b>2%</b>	<b>10%</b>	<b>1%</b>	<b>100%</b>

The following figures provide a detailed breakdown of 2005 operations activity on an airport by airport basis by RTPO area.

**Figure 133: Benton-Franklin- Walla Walla RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Lower Monumental State	120,750	300	0%
Martin Field	120,750	13,250	11%
Prosser	230,000	12,240	5%
Richland	115,000	28,700	25%
Tri-Cities	260,000	90,260	35%
Vista Field	230,000	15,750	7%
Walla Walla Regional Service	310,000	35,168	11%
<b>Total Operations</b>	<b>1,386,500</b>	<b>195,668</b>	<b>14%</b>

**Figure 134: Northeast Washington RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Avey Field State	120,750	800	1%
Colville Municipal	230,000	18,375	8%
Ferry County	120,750	750	1%
Ione Municipal	120,750	1,770	1%
Sand Canyon	230,000	5,950	3%
Sullivan Lake State	120,750	300	0%
<b>Total Operations</b>	<b>943,000</b>	<b>27,945</b>	<b>3%</b>

**Figure 135: North Central RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Anderson Field	120,750	14,700	12%
Cashmere Dryden	230,000	5,588	2%
Chelan Municipal	120,750	15,600	13%
Dorothy Scott Municipal	230,000	12,903	6%
Lake Wenatchee State	120,750	600	0%
Lost River Resort	120,750	500	0%
Mansfield	120,750	700	1%
Methow Valley	120,750	2,600	2%
Okanogan Legion	120,750	5,450	5%
Omak	230,000	8,000	3%
Pangborn Memorial	230,000	79,751	35%
Stehekin State	120,750	250	0%
Tonasket Municipal	230,000	2,500	1%
Twisp Municipal	230,000	10,600	5%
Waterville	120,750	3,250	3%
<b>Total Operations</b>	<b>2,466,750</b>	<b>162,992</b>	<b>7%</b>

**Figure 136: Other Airports (San Juan Islands)**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Friday Harbor	138,000	65,457	47%
Friday Harbor SPB	230,000	8,734	4%
Lopez Island	230,000	13,500	6%
Orcas Island	230,000	36,616	16%
Roche Harbor SPB	230,000	2,800	1%
Rosario SPB	230,000	5,312	2%
<b>Total Operations</b>	<b>1,288,000</b>	<b>132,419</b>	<b>10%</b>

**Figure 137: Palouse RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Little Goose Lock & Dam State	120,750	300	0%
Lower Granite State	120,750	300	0%
Pullman/Moscow Regional Service	195,000	34,682	18%
Rogersburg State	120,750	300	0%
Rosalia Municipal	230,000	7,222	3%
Whitman County Memorial	230,000	8,000	3%
Willard Field	120,750	8,300	7%
<b>Total Operations</b>	<b>1,138,000</b>	<b>59,104</b>	<b>5%</b>

**Figure 138: Peninsula RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Forks Municipal	230,000	1,800	1%
Jefferson County International	230,000	47,400	21%
Quillayute	230,000	1,700	1%
Sanderson Field	230,000	57,714	25%
Sekiu	172,500	776	0%
Sequim Valley	172,500	12,600	7%
Wm. R. Fairchild International	230,000	51,418	22%
<b>Total Operations</b>	<b>1,495,000</b>	<b>173,408</b>	<b>12%</b>



**Figure 139: Puget Sound Regional Council**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
American Lake SPB	230,000	50	0%
Arlington Municipal	270,000	148,540	55%
Auburn Municipal	231,000	143,450	62%
Bandera State	112,500	300	0%
Boeing Field/King County Int'l	380,000	251,856	66%
Bremerton National	240,000	54,645	23%
Crest Airpark	240,000	146,250	61%
Darrington Municipal	135,000	1,750	1%
Firstair Field	150,000	32,850	22%
Harvey Field	230,000	139,160	61%
Kenmore Air Harbor SPB/Lake Union	60,000	31,200	52%
Kenmore Air Harbor, Inc.	56,250	57,000	101%
Pierce County/Thun Field	213,200	61,638	29%
Poulsbo SPB	230,000	275	0%
Ranger Creek State	105,000	2,050	2%
Renton Municipal	230,000	87,571	38%
Sea-Tac International	533,041	346,744	65%
Seattle Seaplanes SPB	-	2,200	0%
Shady Acres	120,750	13,500	11%
Sky Harbor	105,000	1,000	1%
Skykomish State	112,500	300	0%
Snohomish County/Paine Field	316,218	150,368	48%
Spanaway	140,000	13,500	10%
Swanson Field	112,500	6,315	6%
Tacoma Narrows	240,000	93,159	39%
Vashon Municipal	120,000	8,740	7%
Will Rogers Wiley Post SPB	60,000	2,387	4%
<b>Total Operations</b>	<b>4,972,959</b>	<b>1,796,798</b>	<b>36%</b>

**Figure 140: Quad County RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Bowers Field	198,700	21,545	11%
Cle Elum Municipal	120,750	5,115	4%
Davenport Municipal	120,750	4,750	4%
Desert Aire	230,000	2,750	1%
DeVere Field	172,500	1,595	1%
Easton State	172,500	300	0%
Ephrata Municipal	230,000	30,450	13%
Grand Coulee Dam	120,750	11,785	10%
Grant County International	470,000	144,756	31%
J-Z	120,750	50	0%
Lind Municipal	120,750	750	1%
Moses Lake Municipal	230,000	24,750	11%
New Warden	120,750	500	0%
Odessa Municipal	230,000	8,225	4%
Othello Municipal	120,750	32,760	27%
Pru Field	230,000	750	0%
Quincy Municipal	120,750	1,250	1%
Wilbur Municipal	230,000	3,750	2%
Wilson Creek	120,750	250	0%
<b>Total Operations</b>	<b>3,480,450</b>	<b>296,081</b>	<b>9%</b>

**Figure 141: Skagit/Island RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Anacortes	230,000	27,386	12%
Camano Island Airfield	172,500	2,750	2%
Concrete Municipal	172,500	8,750	5%
Skagit Regional	270,000	61,480	23%
Skyline SPB	230,000	230	0%
Wes Lupien	172,500	13,100	8%
Whidbey Airpark	172,500	13,100	3%
<b>Total Operations</b>	<b>1,420,000</b>	<b>126,796</b>	<b>9%</b>

**Figure 142: Southwest Washington RTC**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Cedars North Airpark	172,500	1,500	1%
Columbia Gorge Reg./The Dalles	230,000	31,850	14%
Fly For Fun	230,000	2,250	1%
Goheen Field	172,500	18,900	11%
Goldendale Municipal	120,750	5,300	4%
Grove Field	230,000	7,775	3%
Pearson Field	180,000	63,050	35%
<b>Total Operations</b>	<b>1,335,750</b>	<b>130,625</b>	<b>10%</b>

**Figure 143: Southwest Washington RTP0**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Bowerman Field	97,500	7,250	7%
Chehalis Centralia	210,000	32,010	15%
Copalis State	120,750	200	0%
Elma Municipal	120,750	9,800	8%
Kelso-Longview	230,000	32,110	14%
Ocean Shores Municipal	120,750	6,189	5%
Packwood	172,500	1,050	1%
Port of Ilwaco	172,500	1,000	1%
Strom Field	172,500	1,300	1%
Toledo-Winlock Ed Carlson Mem.	172,500	27,510	16%
Westport	120,750	1,000	1%
Willapa Harbor	172,500	1,000	1%
Woodland State	172,500	5,600	3%
<b>Total Operations</b>	<b>2,055,500</b>	<b>126,019</b>	<b>6%</b>

**Figure 144: Spokane RTC**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Cross Winds	120,750	500	0%
Deer Park Municipal	230,000	34,650	15%
Felts Field	230,000	68,649	30%
Mead Flying Service	120,750	6,300	5%
Spokane International	215,000	91,354	42%
<b>Total Operations</b>	<b>916,500</b>	<b>201,453</b>	<b>22%</b>

**Figure 145: Thurston RPC**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Hoskins Field	172,500	1,250	1%
Olympia	230,000	89,527	39%
R & K Skyranch	172,500	8,150	5%
Western Airpark	172,500	25,500	15%
<b>Total Operations</b>	<b>747,500</b>	<b>124,427</b>	<b>17%</b>

**Figure 146: Whatcom COG**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Bellingham International	230,000	85,410	37%
Blaine Municipal	230,000	5,400	2%
Floathaven SPB	230,000	2,500	1%
Lynden Municipal	172,500	7,350	4%
Point Roberts Airpark	172,500	200	0%
<b>Total Operations</b>	<b>1,035,000</b>	<b>100,860</b>	<b>10%</b>

**Figure 147: Yakima Valley COG**

Airport	Operations Capacity (ASV)	2005	2005 %
		Demand	Utilization
Sunnyside Municipal	230,000	3,000	1%
Tieton State	120,750	300	0%
Yakima Air Terminal	230,000	44,682	19%
<b>Total Operations</b>	<b>580,750</b>	<b>47,982</b>	<b>8%</b>

## What Was the Scope of Our Analysis?

One of the most widely used methodologies for determining airfield capacity is described in FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*. The analyses employed herein reference the guidance in this Advisory Circular for determining the aircraft operational throughput capacity of Washington airport airfield systems.

The analysis of runway system capacity considered a variety of factors including.

- Meteorology
- Runway system configuration and use
- Air Traffic Control Procedures
- Aircraft fleet mix
- Airport operations characteristics including the percent of operations that are arrivals and departures (affects hourly capacities), and the percent that are touch-and-go
- The availability and spacing of exit taxiways

Each take-off or landing at an airport is counted as a single aircraft operation. The airfield operations capacity analyses compared and contrasted the actual 2005 and projected 2030 aircraft operations levels presented in the forecasts against each airport's Annual Service Volume (ASV) as calculated and presented in Phase I. The percentage utilization of each airport's ASV was calculated for both the 2005 and 2030 benchmark years based on the existing and/or near-term configuration of the airport. As previously stated, the FAA recommends airports initiate planning of capacity improvements when activity levels exceed 60 percent of the airport's ASV, and seek to have improvements in place and operational by the time activity reaches 70 percent of operations capacity, in order to avoid congestion. While airports can continue to function when demand exceeds operations capacity, congestion and delays increase as activity increases.

Once the capacity calculations were completed for each airport, the findings were consolidated by state airport service classifications updated under Phase II, as well as ESSB Special Emphasis Regions and RTPO planning areas to provide an overall system-wide perspective. The findings of the analyses are presented below.

## Results - by category

### Statewide Perspective

*Overall operations demand system-wide is expected to increase from 14.6 percent of capacity in 2005 to 22.5 percent of total system capacity in 2030*

Phase II forecasts suggests that overall operations demand system-wide is expected to increase from 14.6 percent of capacity in 2005 to 22.5 percent of total system capacity in 2030. The greatest operations demand will continue to be experienced by the Commercial and Regional Service airports, which increase from 11 percent of system capacity in 2005 to 17 percent in 2030. Figure 148 provides a comparison of existing capacity against 2005 and 2030 demand levels by airport service classification.

**Figure 148: 2005 v. 2030 Demand by Service Classification**

	Commercial Service	Regional Service	Community Service	Local Service	Recreation/ Remote	Seaplane Base	Totals
2005 Capacity	3,937,291	4,048,418	5,824,200	3,297,500	6,424,250	1,786,250	25,261,659
2005 Operations	1,442,540	1,258,368	500,096	77,165	361,575	55,688	3,695,432
2030 Operations	2,462,017	1,859,313	691,005	118,185	476,450	86,940	5,693,910
% Increase	71%	48%	38%	53%	32%	56%	54%

*Over 60% of statewide operations capacity is provided by airports classified as Community Service, Local Service and Recreation/Remote facilities.*

As already noted, overall existing and future aircraft operations activity is well below the capacity of the aviation system when viewed from a statewide perspective. However, aircraft operations tend to concentrate around the major population centers, primarily in the Puget Sound region, and exceed FAA thresholds for the planning or development of capacity-related improvements.

Based on airport ASV assignments developed during Phase I, over 60 percent of statewide operations capacity is provided by airports classified as Community Service, Local Service and Recreation/Remote facilities. In contrast, Commercial and Regional Service airports provide only about one-third of the state's overall system capacity while accommodating over 75 percent of overall statewide operations activity by 2030.

Commercial Service airports already experiencing activity levels beyond the FAA's 60 percent capacity threshold and anticipated to require capacity-related improvements over the forecast period include:

- Boeing Field/King County International
- Kenmore Air Harbor, Inc.
- Sea-Tac International Airport

*Two additional  
Commercial Service  
facilities projected to  
exceed FAA thresholds  
over the planning period  
are Friday Harbor and  
Spokane International  
Airport.*

Two additional Commercial Service facilities projected to exceed FAA thresholds over the planning period are Friday Harbor and Spokane International Airport. Both Friday Harbor and Spokane International Airports are forecast to require capacity-related improvements before the end of the planning period.

Among the Regional Service airports in the state, only Auburn Municipal and Harvey Field currently exceed the FAA's 60 percent planning threshold. Long term, the following facilities are expected to exceed the 60 percent capacity utilization benchmark.

- Arlington Municipal
- Auburn Municipal
- Harvey Field
- Olympia
- Snohomish County/Paine Field

Of the airports within the lower service classifications, only Crest Airpark and Kenmore Air Seaplane Base/Lake Union are noteworthy in terms of capacity utilization. Crest Airpark currently exceeds FAA's 60 percent planning threshold, but slow projected operations growth does not surpass 70 percent capacity before 2030. Kenmore Air Harbor Seaplane Base/Lake Union is expected to exceed both the 60 and 70 percent thresholds before the end of the forecast period.

## Airfield Capacity by Special Emphasis Regions

*By 2030, combined aircraft operations within the four Special Emphasis Regions are projected to reach 155% of 2005 levels.*

By 2030, combined aircraft operations within the four Special Emphasis Regions are projected to reach 155 percent of 2005 levels. The relative relationship of Special Emphasis Region operations to total Washington operations remains essentially the same at 62 percent of total statewide activity as shown in the figure below. In addition, there is little to no change in the relative percent distribution of aircraft operations between Special Emphasis Regions as well.

**Figure 149: 2030 Operations Distribution by Special Emphasis Region**

Special Emphasis Region	2005 Operations Activity	2005 Share of WA Operations	Forecast 2030 Operations	2030 Share of WA Operations
PSRC	1,794,598	49%	2,846,967	50%
Southwest	131,185	4%	194,651	3%
Spokane	201,453	5%	252,742	4%
Tri-Cities	146,950	4%	181,798	3%

Based on the Phase II aviation demand forecasts, the following airports are projected to meet or exceed FAA capacity planning thresholds by 2030 for each Special Emphasis Region.

### **PSRC Region Airports – Demand Expected to Reach 60% of Capacity**

- Arlington Municipal
- Auburn Municipal
- Boeing Field/King County International
- Crest Airpark
- Harvey Field
- Kenmore Air Harbor SPB
- Kenmore Air Harbor, Inc.
- Seattle-Tacoma International
- Snohomish County/Paine Field



**Southwest Region Airports– Demand Expected to Reach 60% of Capacity**

- None

**Spokane Region Airports– Demand Expected to Reach 60% of Capacity**

- Spokane International

**Tri-Cities Region Airports– Demand Expected to Reach 60% of Capacity**

- None

**Airfield Capacity by RTPO Area**

*One-third of the airports within the PSRC region may face capacity constraints by the end of the planning period*

From the preceding figures, it is apparent that any future constraints in operations capacity at Washington airports are limited to a few key facilities. However, what is also apparent is that it is in the PSRC region where there is a concentration of airports expected to experience demand beyond their current operating capacity. Unlike other regions where, at most, one airport may experience high demand but other nearby facilities have substantial reserve capacity, one-third of the airports within the PSRC region may face capacity constraints by the end of the planning period. As a result, demand management alternatives such as shifting activity from one airport to another may be limited. Figure 150 summarizes the anticipated changes in operations activity level by RTPO between 2005 and 2030.

**Figure 150: 2030 Operations Distribution by RTPO**

RTPO	Operations Capacity	2005 Operations Demand	2030 Operations Demand
Benton-Franklin-Walla Walla	1,386,500	195,668	264,650
Northeast Washington	943,000	27,945	44,104
North Central Washington	2,466,750	162,992	237,351
Palouse	1,138,000	59,104	68,815
Peninsula	1,495,000	173,408	242,146
Puget Sound Regional Council	4,972,959	1,796,798	2,850,332
Quad County	3,480,450	296,081	407,535
Other (San Juan Isl.)	1,288,000	132,419	310,520
Skagit/Island	1,420,000	119,646	165,719
Spokane	916,500	201,453	299,492
Southwest Washington (RTC)	1,335,750	130,625	204,156
Southwest Washington (RTPO)	2,055,500	126,019	172,629
Thurston	747,500	124,427	212,251
Whatcom	1,035,000	100,860	156,646
Yakima Valley	580,750	47,982	57,560
Totals	25,261,659	3,695,427	5,693,905

The figures below present an airport-by-airport breakdown comparing 2005 and 2030 operations activity for each RTPO area.

**Figure 151: Benton-Franklin- Walla Walla RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Lower Monumental State	120,750	300	0%	300	0%
Martin Field	120,750	13,250	11%	22,250	18%
Prosser	230,000	12,240	5%	21,014	9%
Richland	115,000	28,700	25%	40,950	36%
Tri-Cities	260,000	90,260	35%	112,858	43%
Vista Field	230,000	15,750	7%	18,450	8%
Walla Walla Regional Service	310,000	35,168	11%	48,828	16%
<b>Total Operations</b>	<b>1,386,500</b>	<b>195,668</b>	<b>14%</b>	<b>264,650</b>	<b>19%</b>

**Figure 152: Northeast Washington RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Avey Field State	120,750	800	1%	800	1%
Colville Municipal	230,000	18,375	8%	30,013	13%
Ferry County	120,750	750	1%	1,000	1%
Ione Municipal	120,750	1,770	1%	2,891	2%
Sand Canyon	230,000	5,950	3%	9,100	4%
Sullivan Lake State	120,750	300	0%	300	0%
<b>Total Operations</b>	<b>943,000</b>	<b>27,945</b>	<b>3%</b>	<b>44,104</b>	<b>5%</b>

**Figure 153: North Central RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Anderson Field	120,750	14,700	12%	14,700	12%
Cashmere Dryden	230,000	5,588	2%	7,540	3%
Chelan Municipal	120,750	15,600	13%	26,000	22%
Dorothy Scott Municipal	230,000	12,903	6%	18,181	8%
Lake Wenatchee State	120,750	600	0%	600	0%
Lost River Resort	120,750	500	0%	500	0%
Mansfield	120,750	700	1%	700	1%
Methow Valley	120,750	2,600	2%	4,591	4%
Okanogan Legion	120,750	5,450	5%	11,375	9%
Omak	230,000	8,000	3%	12,141	5%
Pangborn Memorial	230,000	79,751	35%	120,992	53%
Stehekin State	120,750	250	0%	250	0%
Tonasket Municipal	230,000	2,500	1%	3,951	2%
Twisp Municipal	230,000	10,600	5%	12,080	5%
Waterville	120,750	3,250	3%	3,750	3%
<b>Total Operations</b>	<b>2,466,750</b>	<b>162,992</b>	<b>7%</b>	<b>237,351</b>	<b>10%</b>

**Figure 154: Other Airports (San Juan Islands)**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Friday Harbor	138,000	65,457	47%	196,900	143%
Friday Harbor SPB	230,000	8,734	4%	21,426	9%
Lopez Island	230,000	13,500	6%	21,000	9%
Orcas Island	230,000	36,616	16%	61,582	27%
Roche Harbor SPB	230,000	2,800	1%	3,300	1%
Rosario SPB	230,000	5,312	2%	6,312	3%
<b>Total Operations</b>	<b>1,288,000</b>	<b>132,419</b>	<b>10%</b>	<b>310,520</b>	<b>24%</b>

**Figure 155: Palouse RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Little Goose Lock & Dam State	120,750	300	0%	300	0%
Lower Granite State	120,750	300	0%	300	0%
Pullman/Moscow Regional Service	195,000	34,682	18%	41,301	21%
Rogersburg State	120,750	300	0%	300	0%
Rosalia Municipal	230,000	7,222	3%	7,363	3%
Whitman County Memorial	230,000	8,000	3%	10,751	5%
Willard Field	120,750	8,300	7%	8,500	7%
<b>Total Operations</b>	<b>1,138,000</b>	<b>59,104</b>	<b>5%</b>	<b>68,815</b>	<b>6%</b>

**Figure 156: Peninsula RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Forks Municipal	230,000	1,800	1%	6,050	3%
Jefferson County International	230,000	47,400	21%	57,155	25%
Quillayute	230,000	1,700	1%	14,950	7%
Sanderson Field	230,000	57,714	25%	83,365	36%
Sekiu	172,500	776	0%	2,547	1%
Sequim Valley	172,500	12,600	7%	14,850	9%
Wm. R. Fairchild International	230,000	51,418	22%	63,229	27%
<b>Total Operations</b>	<b>1,495,000</b>	<b>173,408</b>	<b>12%</b>	<b>242,146</b>	<b>16%</b>

**Figure 157: Puget Sound Regional Council**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
American Lake SPB	230,000	50	0%	50	0%
Arlington Municipal	270,000	148,540	55%	227,208	84%
Auburn Municipal	231,000	143,450	62%	169,949	74%
Bandera State	112,500	300	0%	300	0%
Boeing Field/King County Int'l	380,000	251,856	66%	549,181	145%
Bremerton National	240,000	54,645	23%	118,500	49%
Crest Airpark	240,000	146,250	61%	162,450	68%
Darrington Municipal	135,000	1,750	1%	2,000	1%
Firstair Field	150,000	32,850	22%	37,800	25%
Harvey Field	230,000	139,160	61%	237,636	103%
Kenmore Air Harbor SPB/Lake Union	60,000	31,200	52%	46,700	78%
Kenmore Air Harbor, Inc.	56,250	57,000	101%	83,300	148%
Pierce County/Thun Field	213,200	61,638	29%	72,859	34%
Poulsbo SPB	230,000	275	0%	275	0%
Ranger Creek State	105,000	2,050	2%	2,050	2%
Renton Municipal	230,000	87,571	38%	124,337	54%
Sea-Tac International	533,041	346,744	65%	633,599	119%
Seattle Seaplanes SPB	-	2,200	0%	3,365	0%
Shady Acres	120,750	13,500	11%	15,300	13%
Sky Harbor	105,000	1,000	1%	1,000	1%
Skykomish State	112,500	300	0%	300	0%
Snohomish County/Paine Field	316,218	150,368	48%	199,783	63%
Spanaway	140,000	13,500	10%	14,850	11%
Swanson Field	112,500	6,315	6%	7,015	6%
Tacoma Narrows	240,000	93,159	39%	127,097	53%
Vashon Municipal	120,000	8,740	7%	11,040	9%
Will Rogers Wiley Post SPB	60,000	2,387	4%	2,387	4%
<b>Total Operations</b>	<b>4,972,959</b>	<b>1,796,798</b>	<b>36%</b>	<b>2,850,332</b>	<b>57%</b>

Figure 158: Quad County RTPO

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Bowers Field	198,700	21,545	11%	30,377	15%
Cle Elum Municipal	120,750	5,115	4%	13,946	12%
Davenport Municipal	120,750	4,750	4%	7,750	6%
Desert Aire	230,000	2,750	1%	13,000	6%
DeVere Field	172,500	1,595	1%	1,631	1%
Easton State	172,500	300	0%	300	0%
Ephrata Municipal	230,000	30,450	13%	64,400	28%
Grand Coulee Dam	120,750	11,785	10%	16,022	13%
Grant County International	470,000	144,756	31%	174,385	37%
J-Z	120,750	50	0%	50	0%
Lind Municipal	120,750	750	1%	750	1%
Moses Lake Municipal	230,000	24,750	11%	32,400	14%
New Warden	120,750	500	0%	500	0%
Odessa Municipal	230,000	8,225	4%	9,784	4%
Othello Municipal	120,750	32,760	27%	35,490	29%
Pru Field	230,000	750	0%	750	0%
Quincy Municipal	120,750	1,250	1%	1,250	1%
Wilbur Municipal	230,000	3,750	2%	4,500	2%
Wilson Creek	120,750	250	0%	250	0%
<b>Total Operations</b>	<b>3,480,450</b>	<b>296,081</b>	<b>9%</b>	<b>407,535</b>	<b>12%</b>

Figure 159: Skagit/Island RTPO

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Anacortes	230,000	27,386	12%	43,457	19%
Camano Island Airfield	172,500	2,750	2%	3,250	2%
Concrete Municipal	172,500	8,750	5%	10,500	6%
Skagit Regional	270,000	61,480	23%	84,626	31%
Skyline SPB	230,000	230	0%	375	0%
Wes Lupien	172,500	13,100	8%	16,400	10%
Whidbey Airpark	172,500	13,100	3%	16,400	4%
<b>Total Operations</b>	<b>1,420,000</b>	<b>126,796</b>	<b>9%</b>	<b>175,008</b>	<b>12%</b>

**Figure 160: Southwest Washington RTC**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Cedars North Airpark	172,500	1,500	1%	1,750	1%
Columbia Gorge Reg./The Dalles	230,000	31,850	14%	44,460	19%
Fly For Fun	230,000	2,250	1%	2,750	1%
Goheen Field	172,500	18,900	11%	50,850	29%
Goldendale Municipal	120,750	5,300	4%	10,750	9%
Grove Field	230,000	7,775	3%	12,644	5%
Pearson Field	180,000	63,050	35%	80,952	45%
<b>Total Operations</b>	<b>1,335,750</b>	<b>130,625</b>	<b>10%</b>	<b>204,156</b>	<b>15%</b>

**Figure 161: Southwest Washington RTPO**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Bowerman Field	97,500	7,250	7%	8,000	8%
Chehalis Centralia	210,000	32,010	15%	44,024	21%
Copalis State	120,750	200	0%	200	0%
Elma Municipal	120,750	9,800	8%	10,850	9%
Kelso-Longview	230,000	32,110	14%	39,405	17%
Ocean Shores Municipal	120,750	6,189	5%	10,871	9%
Packwood	172,500	1,050	1%	1,550	1%
Port of Ilwaco	172,500	1,000	1%	1,000	1%
Strom Field	172,500	1,300	1%	2,550	1%
Toledo-Winlock Ed Carlson Mem.	172,500	27,510	16%	38,360	22%
Westport	120,750	1,000	1%	8,519	7%
Willapa Harbor	172,500	1,000	1%	1,000	1%
Woodland State	172,500	5,600	3%	6,300	4%
<b>Total Operations</b>	<b>2,055,500</b>	<b>126,019</b>	<b>6%</b>	<b>172,629</b>	<b>8%</b>

**Figure 162: Spokane RTC**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Cross Winds	120,750	500	0%	500	0%
Deer Park Municipal	230,000	34,650	15%	47,250	21%
Felts Field	230,000	68,649	30%	93,443	41%
Mead Flying Service	120,750	6,300	5%	7,000	6%
Spokane International	215,000	91,354	42%	151,298	70%
<b>Total Operations</b>	<b>916,500</b>	<b>201,453</b>	<b>22%</b>	<b>299,492</b>	<b>33%</b>

**Figure 163: Thurston RPC**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Hoskins Field	172,500	1,250	1%	1,500	1%
Olympia	230,000	89,527	39%	170,785	74%
R & K Skyranch	172,500	8,150	5%	11,316	7%
Western Airpark	172,500	25,500	15%	28,650	17%
<b>Total Operations</b>	<b>747,500</b>	<b>124,427</b>	<b>17%</b>	<b>212,251</b>	<b>28%</b>

**Figure 164: Whatcom COG**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Bellingham International	230,000	85,410	37%	127,097	55%
Blaine Municipal	230,000	5,400	2%	12,949	6%
Floathaven SPB	230,000	2,500	1%	2,750	1%
Lynden Municipal	172,500	7,350	4%	13,650	8%
Point Roberts Airpark	172,500	200	0%	200	0%
<b>Total Operations</b>	<b>1,035,000</b>	<b>100,860</b>	<b>10%</b>	<b>156,646</b>	<b>15%</b>

**Figure 165: Yakima Valley COG**

Airport	Operations Capacity (ASV)	2005	2005 %	2030	2030 %
		Demand	Utilization	Demand	Utilization
Sunnyside Municipal	230,000	3,000	1%	3,250	1%
Tieton State	120,750	300	0%	300	0%
Yakima Air Terminal	230,000	44,682	19%	54,010	23%
<b>Total Operations</b>	<b>580,750</b>	<b>47,982</b>	<b>8%</b>	<b>57,560</b>	<b>10%</b>

## Summary

*Operations demand is not uniformly distributed across the state but concentrated at a few key airports around the major population/economic centers*

Under the Phase II demand/capacity analysis, it was determined that the total aggregate operations capacity of the Washington aviation system far exceeds the projected operations demand through 2030. However, operations demand is not uniformly distributed across the state, but concentrated at a few key airports around the major population/economic centers. These are the same areas where traditional methods of enhancing airport capacity, such as constructing additional runways or new airports, will be very difficult, if not impossible due to cost, proximity of existing development, etc. Because of this, less traditional methods of capacity enhancement should be examined. Demand management, facility reclassification and other traffic redistribution techniques may be the best options for long term preservation of the aviation system.

In 2005, ten of the 20 busiest airports in Washington State were located within the PSRC boundary. These airports accommodated 65 percent of the operations occurring at the 20 busiest airports and nearly 50 percent of total operations statewide.

In 2005, operations at six Washington airports exceeded the FAA's 60 percent threshold for planning additional capacity. All six airports are located within the Puget Sound Regional Council ESSB Special Emphasis Region. One facility, the Kenmore Air Harbor, Inc., is already well above the 70 percent capacity threshold – the point at which capacity improvements should be operational.

*The relative distribution of aircraft operations throughout the state is projected to change little between 2005 and 2030*

The relative distribution of aircraft operations throughout the state is projected to change little between 2005 and 2030. By 2030, only minor changes are expected to occur in the general relationship between the 20 busiest airports in the state. Ten of the top 20 airports are still in the PSRC region - which is expected to retain a 50 percent share of total statewide aircraft operations. Although Pierce County/Thun Field drops from the top 20 list by 2030, Bremerton National is added. All other PSRC airports from the 2005 top 20 remain on the list in 2030, although their relative rankings may shift somewhat. Two of the 20 busiest airports listed in both 2005 and 2030 are privately owned and operated facilities – Harvey Field and Crest Airpark. By 2030, Harvey Field is expected to be the third busiest airport in the state behind Seattle-Tacoma International and King County International/Boeing Field, in first and second place respectively.

By 2030, ten Washington airports are projected to be at or above 70 percent capacity. This means that measures to increase capacity should be



underway at that time. Seven of the ten airports are within the PSRC area. During the same time frame, two additional PSRC airports are expected to have reached the 60 percent threshold to initiate planning for additional capacity.

## Key Findings

The general findings of the airfield capacity analysis may be summarized as follows:

- Overall, statewide airfield capacity is sufficient to meet forecast demand levels through 2030; however, much of the available capacity is not placed strategically to serve expected demand.
- The primary capacity issue is the distribution or concentration of demand in the most populated regions. This makes capacity enhancement more difficult.
- There are enough runways in the state system to accommodate future demand; however, the runways are not located where the demand is expected to occur.
- The concentration of operations activity at a few key airports within the Puget Sound area reflects the significant imbalance in the system.
- The smaller, outlying airports in Washington provide over 60 percent of the state's operations capacity, but only generate about 25 percent of the demand.
- While the largest airports provide one-third of total operations capacity they attract 75 percent of the demand.
- Of the ten airports expected to experience capacity constraints by 2030, only Olympia and Spokane are located outside the PSRC planning area.
- The number of PSRC area airports anticipated to experience capacity constraints limits the options for managing demand within the RTPO area. Methods such as traffic redistribution or demand management are more difficult when all system airports are nearing capacity.
- The airports expected to experience capacity constraints are the ones most likely to have statewide impact (Sea-Tac International, Boeing Field/King County International and Spokane International)
- All the state's air carrier airports will be negatively impacted when Sea-Tac reaches capacity in 2024.

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